

The official Journal of
The South Australia Society of
Model & Experimental Engineers Inc.



APRIL 2020

ISSN / 0155 / 3700

(This bulletin is issued for information only)

EDITORIAL.

The world has changed greatly in the last couple of months. We would never have imagined closing SASMEE park, much less being encouraged not to meet each other.

Communication.

As well as the Bulletin, SASMEE has a Member's Forum on the SASMEE Website and a Facebook page. These are all set up so we can stay in touch during this very difficult time.

For those who have no email address and are not on Facebook, we intend to publish the Bulletin every two months. To that end, we will be looking for articles, particularly workshop activities. A couple of photographs and paragraphs to make a story of what you have been building over these long weeks of isolation.

In the workshop

During these months of isolation, the suburbs are echoing to the sound of industry in backyard workshops. We will try to include articles from members as to how their projects are going. Perhaps consider this a friendly forewarning of requests for articles.

1:1 Scale

While SASMEE is a model (and experimental) society, over the years I have come across an amazing array of full-sized projects while visiting workshops. These have included vintage cars and motor bikes, drag racers, boats, both power and sailing, telescopes, aeroplanes, bespoke workshop equipment to name just some. We would like to include an occasional article on some of these, so expect to be contacted if word gets out about your 12" to the foot project (or 1,000mm to the metre if you prefer).

PRESIDENT'S REPORT.

Bryan Homann

Covid-19 keeping in touch.

During this continuing Covid-19 issue, it is important from SASMEE's point of view, that we maintain contact with all our members.

Therefore, we will keep printing the Bulletin, despite the ever increasing costs of printing and postage.

However, I would ask as many members as possible to request access to the SASMEE email list.

By having that communication route, we can provide quick information when necessary.

and if enough people have an occasional look, you may be able to get help.

Doing this, and perhaps sharing some pictures of what you are making, can go some way toward retaining cohesiveness within the club.

We have also created a Facebook page specifically only for SASMEE members for much the same purpose. It is a place to seek help, tell us what you are, making, and to see what others are up to in their workshops. So please contribute.

Now to general news.

As the Covid-19 situation has escalated, we initially tried to maintain at least the Wednesday working bee. Well, we have managed that to a degree, but as it is predominantly the retired members (some who have been in that happy state for a long time), several have decided to isolate themselves as much as possible. In some cases, that has meant staying away all the time. In others it has meant coming down on their own, or with one other person, to avoid the risk of contact.

Obviously, for safety reasons we cannot manage large projects, so it has become pretty much a means of trying to conduct a holding operation. This means things like, trying to keep the pond wet and the fishes alive, maintaining cleanliness in the canteen, and dealing with weed plants.

Be aware that any plans we have may change at short notice if government decrees require it.

The following link may assist members in keeping abreast of the State Government's requirements.

<https://www.covid-19.sa.gov.au/>

We have had a period of odd ball water meter readings, and after a lot of testing it has finally been determined that there is no leak on the main. This still leave us with the mystery as to why such odd spikes in

water consumption have occurred. To that end, regular meter readings are being taken and the results will be analysed.

The bore has been playing up (end of summer), but due to a select few members, it has been kept operating enough that the pond is still wet, and the fish have been fed. Recent rains should assist us getting over this problem.

We have also placed a limited supply of hand sanitiser, and some disposable gloves in a tray just outside the workshop door. Please use as necessary only, as you will be aware that supplies of both are very limited. We suggest that you bring your own hand sanitiser to use at the front gate, where we cannot reasonably leave any.

The canteen is off limits unless the managers (myself and Mary) are present.

There is a sign on book in a small metal box mounted on the club room wall to the right of the door. Unless there is good reason to go into the club room, or the boiler house, please don't. A reminder that the boiler house door is connected to the security system, which can only be disarmed inside the club room if you have a code.

One project that has almost been completed, is the rather neat looking re-cladding of the 5" g station first floor after the asbestos removal. The concrete block work will also get a coat of paint closer to re-opening day.



While the ticket box is well on the way too.

Keeping financially afloat.

While we realise that government stimulus packages must prioritise keeping working people in jobs, or supported, the Committee is actively monitoring the situation in case there is an opportunity to assist not-for-profit organisation that don't directly employ people. This includes maintaining close contact with the Unley Council.

In order to reduce our expenditure as much as possible, Canteen supplies have been reduced so that both the glass fronted drinks fridge, and the glass topped ice-cream freezer have been turned off, and left open. The boiler has been emptied and dried out so that we don't need

to use gas to keep it in good health. As indicated above, mains water is turned off, except when we are at the premises, and need it (e.g. for toilet flushing, and hand washing). We will also be undertaking our own mowing of grass. We have some dispensation on the cost of our EFTPOS machines from the Commonwealth Bank, Arrangements have been made to maintain our batteries in the radios, EFTPOS, 5" loco lifter, and locos so that we don't end up having to replace them.

Reopening SASMEE to the public

While we can hope that the closure will not be necessary for a long period, I suspect that will not be the case. Therefore, things will deteriorate at the Park. When we are able to get up and running again, it will be necessary to have some significant working bees to polish the place up. That will include things like;

- making sure the signalling and point systems work properly
 - This will include de-rusting the rails
- All seats and tables are cleaned of bird poo etc
- leaf and bark litter is cleaned up
- re-stocking the canteen
- Re-commissioning the steam house boiler
- Loco owners will need to check out their laid up engines prior to operation.
- Final attention to the lawns and gardens

Recording of SASMEE meetings

It has been brought to our notice that unless there is agreement of those present, that the recording (video and/or audio) of meetings is against the law. SASMEE has done audio recordings, purely for the convenience of the Minute Secretary in preparing his comprehensive written minutes. There was general agreement some years ago that this was acceptable. These recordings are not kept as archival information. Members are hereby notified that this practice will continue, unless there is a motion put to the contrary, or a person present at a meeting objects to the recording process.

Bullying statement to the members of SASMEE – February general Meeting 2020
Bryan Homann – President

It saddens me that I feel the necessity to remind the members that the bullying of other members is something that should not be happening in our club.

Unfortunately, it is happening, by a small minority, against an even smaller minority.

A definition of bullying from the Australian government reads as follows.
<https://bullyingnoway.gov.au/>

Bullying is an ongoing and deliberate misuse of power in relationships through repeated verbal, physical and/or social behaviour that intends to cause physical, social and/or psychological harm. It can involve an individual or a group misusing their power, or perceived power, over one or more persons who feel unable to stop it from happening.

Members need to know that their committee will take serious action against anyone who indulges in bullying. Information will be collected from victims, and perpetrators need to know that the constitutional power given to the Committee will be used to the full extent, in dealing with them

Bullies have no place in SASMEE.

Refer to the new Section 17 of the SASMEE Regulations for more detail.

FOR SALE

NSW C36 Class 4 6 0 Castings and Plans



A full set of plans and castings for a 5" gauge NSW C36 (or a Commonwealth Railways C class with an extended tender) has been generously donated to SASMEE for sale. These were one of the classic Australian designed and built locomotives of the steam era. Locomotive 3642 has been preserved, so a model builder can still view the prototype. A new set plans and castings would cost \$3,000. These are offered for \$1,800.

Reluctant Sale R/C Controlled ST "TOMAR"

Length 30 inches (770mm) 7.2volt heavy duty long lasting battery driving single screw. Four 1.5volt batteries for accessories. R/C antenna hidden in hull. This F/G hulled tug is powerful, reliable and has made several rescues on lake SASMEE. It boasts a skipper and first mate in the wheelhouse and several crewmen on deck. It looks very impressive running at night with no less than 14 LED's lighting prominent parts of the vessel. The 7.2 battery also powers a smoke unit. The model comes with a carrying cradle and storage case. Includes battery charger and pistol grip controller. In excellent condition and would make a beautiful gift even ideal for running in a swimming pool. Good value at \$515.00 ono.



IN THE LIBRARY

Max Shuard

At the General Meetings, I have been presenting a Book of the Month. As we cannot meet at the moment, here is one in the Bulletin.

I have been building a gauge 1 Crampton locomotive. The next project I thought of (possibly, maybe!) was a Jenny Lind. This locomotive class was perhaps the most successful 2 2 2 wheel configuration in the early English railways. An online search showed LBSC had written a series on this locomotive in the 1940 English Mechanics magazine.



Good one! I thought, that's the end of that. But on checking the SASMEE library, there it was. Amazing.

Even more amazing was that, through the dark days of the Battle of Britain and the Blitz on English cities, someone was writing a weekly magazine on model engineering. The magazine itself is fascinating. The words "war" and "Germany" do not appear. There are however, some allusions to the situation.

Advice that the magazine had to be cut down to eight pages because of the paper shortage. There were articles such as how to store your motor(car) due to the petrol shortage.

The advertisements were also very interesting. Many apologies about the shortage of materials and delayed delivery due to other priorities. Off making bombs and machine guns. They don't actually say that, but that is the implication.

And through all of that, articles on how to build things, work metal and all the aspects of model engineering that are timeless.

This isn't exactly a book, and under the circumstances, it isn't exactly a month. But this is one on the many magazine series, we have in the SASMEE library.

So, when we can meet again, come and check out some of the magazines.

We are (slowly) collating a comprehensive catalogue of all the books in the library. There will be three lists, sorted by SASMEE number, Title and Author. Will get it on the website when completed.

TECHNICAL MATTERS

Piston Ring Manufacture.

Article by Bill Coles

From my model making experience both in steam and I.C. combined with a manufacturing back ground I have found that good performance and longevity go hand in hand with effective sealing of components and in particular where pressure is present. The subject described relates to piston rings.

I see that the rings either in steam or IC applications are of major importance and deserve to be made with a degree of excellence. I also hold the view that pistons must have clearance but they are acting as carriers for the piston rings that are doing the actual sealing against pressure.

The rings I have chosen to describe have a diameter of 0.875" [bore size] Inside diam. of 0.799" with a thickness of 0.038". The ring section

is a 0.038" square. A word about material. I use S.G. Cast iron [spheroidal graphite.]

This is a ductile close-grained iron and takes a good finish. This leads to less chance of breakages when installing over the piston. [Surmans supply a range of sizes]

There have been numerous articles written about ring manufacturing in the modelling world but the method described here is based on Professor Chaddock's and relates closely to full size manufacturing methods.

There is a degree of tooling required which may be deterrent, but the end result is justification. e.g. **A round ring with a degree of wall pressure.**

Initial operation is to machine the OD of the ring to a plus size of + 0.008/10"

Turn a length which will give a number of spares. Important is to make this roughing size a recorded dimension as it will be used later. Also make this section parallel. Drill and bore the inside diam.to the finished size e.g. 0.799". A good finish will avoid stress fractures.

Part the rings off with a narrow parting tool to lessen burrs to 0.001/2" wider than the finished ring width. The ring is then placed into a recessed boss which is bored to take the ring OD with the recess to the desired thickness.

The faces of the rings are lapped on fine emery until the finished thickness.

To create the gap in the ring I have made a cleaving tool. Consisting of 2 opposed sections of HSS sharpened to a chisel point. These are brought together with the ring in between. The resultant breakage is difficult to detect.

The wall tension of the ring is created by opening up the gap to a predetermined size, in my case 0.131" [tables are available]. Tooling consists of a shouldered mandrel with a peg over which the ring is spread. [see photo]

While the rings are spread, they are heated together with the mandrel to a good blood red [550-600 c] and held at temperature for 8- 10 minutes. I turn off the lights in the shed so you see the heat colour better. Allow to cool in air whilst still clamped.

Upon removal the rings should hold the preset gap. If not repeat the treatment.

Scaling is minimal and a light brushing will brighten then up.

The ring gap faces are lightly dressed to a clean-up condition and the rings are lightly de-burred with wet and dry.

A stepped mandrel is required with ends centred and a convenient thread section machined on one end. A section is turned down to the original inside diam minus 0.002". A sleeve is bored out to the original turned OD diam. In which a number, generally 2 rings are pushed. The sleeve with the rings enclosed is slid on to the inside diam section of the ring and the ring clamped with a washer which is slightly smaller than the sliding sleeve. Having tightened the nut, the sleeve is then removed, leaving the rings clamped in a true running condition. The rings are now turned down to bore size. This finishing operation is important. The diam. required is to the finished size of your **cylinder bore** as precisely as possible.[target plus/minus zero]. Making your cylinder bores all the same size means all rings can be machined at once. Varying bore sizes means making one ring at a time to suit individual bores. After finish sizing the nut is released and the rings removed for a light deburr on the corners.

All the above involves a degree of tooling but the end result is a ring that is **round**, and has a degree of wall pressure ensuring a good seal without the need for long term bedding in. Parting of a ring of cast iron and cutting a gap in it is a poor option for all the other fine work you put into your project.



Heat treated ring. Next operation is to spring the ring into the recess which is

the depth [thickness] of the finished ring. Ring is sized to thickness on emery paper.

Mandrel for ring heat treatment. Ring is spread over the peg and clamped.



Mandrel for machining OD. Ring is pushed into the large sleeve. The section next to the threads is a clamping sleeve. When removed the ring is up against the small shoulder. Ring is clamped with the nut. The large sleeve is slid off, leaving the ring firmly clamped ready for final OD machining.



Over the range of models I have made I have sets of piston ring tooling that may be suitable for sizes you may require. Let me know if you have any queries. For info I centre the turning mandrels to allow them to be removed and reloaded with rings for the final operation. I have the facility to final grind to size.

In the Workshop

Max Shuard

Some years ago, I purchased a 7 1/4" Tich underframe with quartered wheels from Peter Denholm. Since then progress has been slow, with the Walschaerts valve gear now complete and the underframe running on air.



I also extended the frame and inserted a trailing wheelset. These wheels are purely cosmetic, but also allowed for a longer boiler. The plans for the boiler I had bought from the UK did not comply with the Australian code, so under the watchful eye (and valued advice) of John Monte the boiler was completely redesigned. I had a suitable piece of 6" copper tube, so the boiler was designed around this.

The idea for the wheelset came from a photo I had seen of a 3 1/2 "Tich and I think it improves the proportions (although it will never be a beautiful locomotive!)



After pffaffing about making every fitting I could think of, I've finally had to address the boiler. Bill Coles gave me a gas burner with a nozzle that compares favourably with a Saturn 5 rocket engine. Making accurate moulds has been a challenge. The moulds have been made from timber. By printing the plans and gluing it to the mould, and cutting and sanding (a lot of that) reasonable moulds have appeared.

So far the main components have been made. Have finally got the hang of annealing the copper. Next will be drilling and fitting the tubes. Have not even thought of soldering yet. That is an excitement for another day!



SASMEE BUSINESS

Our Finances

Mary Homann

To the end of February, all looked good. Field day attendances were up on previous years (probably a record coming up) and we had transferred more funds into Term Deposits. Then Covid 19, and we are without income, trying to do necessary maintenance with less people, and still have regular bills coming in, so expect to need to pull some out of reserves.

We have applied for Government assistance to replace our lost revenue, and will advise in due course.

SASMEE - List of appointments made after the 2019 AGM.

There are a number of non-elected positions required for the running of the club. Below is the list of these positions and the appointees.

Public Officer

Secretary (Alan Saunders)

Canteen Managers

Bryan and Mary Homann

Track	Michael Hattersley Michael Moyse
Track Signals	Michael Moyse
Coal Monitor	John Mere
Rolling Stock Inspector	Kingsley Martin
Boiler Inspectors	Bryan Homann Simon Huntington John Montedorisio Peter Hoyer
Auditors	Graham Gaetgen Michael Moyse
Fire	Jake Barber
Buildings	Geoff Hall
Rubbish Collection	David Hawkins
Librarians	Bill Coles Max Shuard
Bulletin Editor	Bill Coles
Pond	Robert Ball
Garden Railway	Max Shuard
Boiler House Manager	Bernie Dickinson
Website and other IT	Jessica and Kingsley Foreman
Driver Trainer/Assessors	John Mere Brenton Dicker
New Members Mentor	Jessica Foreman

Competent Person AALS Allan Wallace

Elected Members 2019/2020

Below are listed the elected members and contact numbers.

President	Bryan Homann
Vice President	Jeff Schaefer
Secretary	Allan Saunders
Minutes Secretary	David Hawkins
Treasurer	Mary Homann
Asst Treasurer	John Harris
Safety Co-ordinator	John Foster
Councillors	Brenton Dicker Kingsley Foreman Max Shuard

Currently a list of email addresses for each position is being developed. This will mean that the position can be contacted even if the incumbent changes. These addresses will be published in due course and will be available on the SASMEE website.